

REMARKS

Claims 1-7, 9-19, 21, 22, 24-28, 31, and 33-39 are currently pending in the subject application and are presently under consideration. Claims 1, 21, 31 and 33 have been amended as shown on pages 2-7 of the Reply. It is respectfully submitted that these amendments herein do not necessitate any further search by Examiner.

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Rejection of Claims 1-7, 9-19, 21, 22, 24-28, 31, and 33-39 Under 35 U.S.C §112

Claims 1-7, 9-19, 21, 22, 24-28, 31 and 33-39 stand rejected under 35 U.S.C. §112, second paragraph, as failing to comply with the written description requirement. Withdrawal of this rejection is requested in view of amendments herein to independent claims 1, 21, 31, and 33. Claims 1, 21, 31, and 33 as amended recite “a reference with consistent length” which is supported in the specification as originally filed. For example, the specification recites “[t]he handle 854 can be employed as a consistent one or two byte reference (or other consistent amount) that generally tends to mitigate the overall amount of data to be transmitted when compared to explicit tag references.” (See page 17, lines 7-10). Accordingly, this rejection should be withdrawn.

II. Rejection of Claims 1-4, 9-12, 14, 18-19, and 33-39 Under 35 U.S.C. §103(a)

Claims 1-4, 9-12, 14, 18-19, and 33-39 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Crater *et al.* (US 6,201,996) in view of Horn *et al.* (US 2003/0004585) in view of Husted *et al.* (US 5,845,149). This rejection should be withdrawn for at least the following reasons. The cited references, either alone or in combination, do not teach or suggest all aspects of the subject claims.

The claimed invention relates to facilitating optimized data transfers between an industrial controller and one or more remote client applications by mitigating the amount of information communicated across the network to the PLC. In particular, independent claim 1 (and similarly independent claim 33) recites *a primary aggregation component associated with an industrial controller, the primary aggregation component aggregates one or more selected data items into an aggregated subset of data items, the primary aggregation component defined*

*and installed by an entity remote from the controller; a communications component associated with the entity remote from the controller, **the communications component transmits the subset of data items via a singular communications packet across a network and adds at least one secondary aggregation component based upon at least one of increased data demands and network protocol considerations; and a component associated with the entity remote from the industrial controller, the component receives handle information from the industrial controller relating to the selected data items and employs the handle information as a reference with consistent length to generate an update data packet to update data locations in the industrial controller.*** Crater *et al.*, Horn *et al.* and Husted *et al.* do not teach or suggest such aspects.

Crater *et al.* relates to communicating among programmable controllers for operating and monitoring industrial processes and equipment. Crater *et al.* provides an object-oriented control structure that facilitates communication between an industrial controller and a remote computer. The control structure is organized around a database of object items each associated with a control function. For each control function, the items include one or more procedures for performing an action associated with the control function. Examiner acknowledges that the primary reference, Crater *et al.* does not teach the claimed invention and provides a secondary reference, Horn *et al.*, to compensate for the after mentioned deficiencies of Crater *et al.* The secondary reference, Horn *et al.*, cited by Examiner, relates to an apparatus and method for controlling an industrial controller based on technology objects. Technology objects are loaded and instantiated into the runtime system of a controller thereby providing technological scaling of the controller. Examiner acknowledges that the secondary reference, Horn *et al.* does not teach the claimed invention and provides a tertiary reference, Husted *et al.*, to compensate for the after mentioned deficiencies of Crater *et al.* and Horn *et al.* The tertiary reference, Husted *et al.*, cited by Examiner, provides an industrial controller with I/O mapping table for linking software addresses to physical network addresses; and this reference does not teach the claimed invention.

At page 6 of the Final Office Action, Examiner incorrectly contends that Crater *et al.* teaches *the primary aggregation component aggregates one or more selected data items into an aggregated subset of data items*, with respect to independent claim 1 (and similarly independent claim 33). The cited portion of the reference (Crater *et al.*) provides for a control structure organized around a database of object items each associated with a control function. For each control function, the items include one or more procedures for performing an action associated

with the control function and one or more procedures for displaying data associated with the control function. The action procedures effectively define the controller repertoire with respect to particular control function. The display procedures include instructions retrievable and executable by the remotely located computer, causing display thereon of the data in a predetermined format (Col. 4, ll. 50-60). Hence, Crater *et al.* provides for only a database of object items each associated with a control function and items further including one or more procedures for performing an action associated with the control function; however, Crater *et al.* does not contemplate *aggregating one or more selected data items into an aggregated subset of data items*. Through this feature, the present invention facilitates mitigating repeated and redundant header and ending data that is generally associated with a network communications packet. *A plurality of related or unrelated (not in contiguous memory portions or of the same data type) data items are aggregated and transmitted in a singular communications packet*, thereby mitigating overhead associated with transmitting these items according to individual data item requests.

At page 7 of the Final Office Action, the Examiner again incorrectly contends that Crater *et al.* teaches *the component receives handle information from the industrial controller relating to the selected data items and employs the handle information as a reference with consistent length to generate an update data packet to update data locations in the industrial controller*, with respect to independent claim 1 (and similarly independent claim 33). The Examiner dismisses applicants' representatives previously presented arguments at page 3, paragraph 6 of the Final Office Action by improperly asserting that such aspects are not recited in the subject claims; however, these aspects are recited in the subject claims. Moreover, the cited portion of the reference (Crater *et al.*) provides for a representing progress of an action by one or more states. An object manager associates entries corresponding to the items of an object and contains storage locations where the associated procedural instructions and/or data can be found (Col. 11, ll. 55-67). The object manager maintains organizational control over the objects, associating the various frames and methods of each object with the object name by means of pointers. This form of organization allows both frames and methods to be specified once but used repeatedly, since different objects can contain pointers to the same method while retaining integrity as independent objects (Col. 14, ll. 1-9). Hence, Crater *et al.* provides for only storage locations for associated procedural instructions and data with items and further provides for pointers to

associate various frames and methods of each object with the object name and thus maintains organizational control over the objects. However, Crater *et al.* does not contemplate *employing the handle information as a reference with consistent length to generate an update data packet to update data locations in the industrial controller*. Through this feature, the present invention facilitates conserving the network bandwidth. This is achieved since storage locations, pointers and explicit tags are often lengthy and consist of variable lengths thus causing variable and often larger amounts of data to be transmitted. The handle is employed as a consistent one or two byte data reference (or other consistent amount) that generally tends to mitigate the overall amount of data to be transmitted when compared to explicit tag references. The handle provides an indirect indication having fixed length (*e.g.*, handles providing 2 byte pointer as opposed to variable length explicit tag names), thus mitigating the amount of information communicated across the network to the PLC when indicating which data item is to be altered.

In view of at least the foregoing, it is readily apparent that the cited references, either alone or in combination, do not teach or suggest all aspects of the subject claims. Accordingly, this rejection should be withdrawn.

III. Rejection of Claims 5-7, 13 and 15-17 Under 35 U.S.C. §103(a)

Claims 5-7, 13 and 15-17 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Crater-Horn-Husted in view of Bhatt *et al.* (US 6,097,399). This rejection should be withdrawn for at least the following reasons. The subject claims depend from independent claim 1, and as discussed *supra*, Crater-Horn-Husted do not teach or suggest all aspects of amended independent claim 1; and Bhatt *et al.* does not make up for the deficiencies of the primary references. Therefore, this rejection should be withdrawn.

IV. Rejection of Claims 21-22, 24 and 31 Under 35 U.S.C. §103(a)

Claims 21-22, 24 and 31 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Crater *et al.* (US 6,201,996) in view of Bhatt *et al.* (US 6,097,399) and in further view of Wang *et al.* (US 6,970,921). This rejection should be withdrawn for at least the following reasons. The cited references do not teach or suggest all aspects of the subject claims.

Independent claim 21 in part recites *receiving handle information from the industrial controller relating to the selected data items; and employing the handle information as a*

reference with consistent length to generate an update data packet to update data locations in the industrial controller. Independent claim 31 recites similar aspects. Crater *et al.*, Bhatt *et al.* and Wang *et al.* are silent regarding such aspects set forth in the subject claims.

Amended claims 21 and 31 recite similar aspects as amended independent claims 1 and 33. As noted above with respect to claims 1 and 33, Crater *et al.* does not teach or suggest *an component associated with the entity remote from the industrial controller, the component receives handle information from the industrial controller relating to the selected data items and employs the handle information as a reference with consistent length to generate an update data packet to update data locations in the industrial controller*; and Bhatt *et al.* and Wang *et al.* do not compensate for these deficiencies. Therefore, this rejection should be withdrawn.

V. Rejection of Claims 25-26 Under 35 U.S.C. §103(a)

Claims 25-26 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Crater-Bhatt-Wang in view of Patel (US 6,889,257). Withdrawal of this rejection is requested for at least the following reasons. As discussed *supra* with regard to independent claim 21, the cited references, individually or in combination, do not teach or suggest all aspects recited in the subject claims. Patel does not make up for the deficiencies of Crater *et al.*, Bhatt *et al.* and Wang *et al.* with respect to independent claim 21 (from which claims 25 and 26 depend from). Thus, it is respectfully submitted that this rejection be withdrawn.

VI. Rejection of Claims 27-28 Under 35 U.S.C. §103(a)

Claims 27-28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Crater-Bhatt-Wang in view of McCoskey (US 2003/0028889). This rejection should be withdrawn for at least the following reasons. The cited references, either alone or in combination, do not teach or suggest all aspects of the subject claims. As discussed *supra* with regard to independent claim 21, the cited references, individually or in combination, do not teach or suggest all aspects recited in the subject claims. McCoskey does not make up for the deficiencies of Crater *et al.*, Bhatt *et al.* and Wang *et al.* with respect to independent claim 21 (from which claims 27 and 28 depend from). Thus, this rejection should be withdrawn.

CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [ALBRP284US].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicants' undersigned representative at the telephone number below.

Respectfully submitted,

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